3-11-2009

Post-project evaluation of IT business cases: The case of an energy supply company

Peter M. Schuurman
p.m.schuurman@rug.nl

Egon W. Berghout
e.w.berghout@rug.nl

芽|Sprouts Working Papers on Information Systems ISSN 1535-6078

Post-project evaluation of IT business cases: The case of an energy supply company

Peter M. Schuurman
Egon W. Berghout

Abstract
This research describes the design of a post-project evaluation model for business cases of IT projects. Structured post-project evaluation is hardly common practice in industry (Gwillim et al., 1995; Kumar, 1990). Consequently, many improvement opportunities are missed out on, including improving future business cases and system development practices. On basis of a literature study a post-project evaluation design matrix was developed to illustrate the most important design issues. This matrix includes six post-project evaluation aspects and for all these aspects, the following five issues: evaluation questions, required information, time frame, roles and possible actions. On the basis of this post-project evaluation design matrix and 30 business case documents a post-project evaluation method was developed for an energy supply company. Various information and communication problems were identified, such as, too little commitment of the business case owner and incomplete initial information. Several quick wins could be established by suggesting improved calculation methods and assigning cost and benefits to responsible owners. Additional benefits could be obtained of post-project evaluation, if the business case should receive significantly more managerial attention and would play a central role in the evaluation of each mile stone. This would considerably improve organizational learning.

Keywords: value creation DECISION making investment evaluation business case information economics Stakeholder analysis

Permanent URL: http://sprouts.aisnet.org/6-65

Reference: Schuurman, Peter, Berghout, Egon (2006). "Post-project evaluation of IT business cases: The case of an energy supply company," University of Groningen, Netherlands . *Sprouts: Working Papers on Information Systems*, 6(65). http://sprouts.aisnet.org/6-65

citer

Post-project evaluation of IT business cases: The case of an energy supply company

Peter Schuurman
Egon Berghout

University of Groningen
Centre of IT Economic Research
P.O. Box 800
9700 AV Groningen
The Netherlands

CITER WP/004/PSEB

28 September 2006

CITER Mission

CITER is an independent research group within the Department of Economics, University of Groningen. Our research is focused on the economics of information technologies. Our research aims at understanding and analyzing the dynamics and the processes of development, distribution and implementation of information and communications technologies and improving their efficiency and effectiveness.

We investigate particular economic issues in the economics of information technologies. For instance, the differences between 'Open' and 'proprietary' technologies, the characteristics of hardware and software commercial demand and supply and the diffusion of new technologies. We also study the efficient and effective use of those technologies, how we can improve IT management and increase the benefits of investment in information technologies.

The objectives of our research are especially useful for organizations using information technologies and to firms competing in this arena, as well as to policy makers and to society as a whole.

Our research is conducted in close cooperation with industry, non-profit organizations and governmental partners, as our field of research is subject to frequent technological and political changes.

Contact information

University of Groningen
CITER-WSN827
P.O. Box 800
9700 AV Groningen
The Netherlands
Tel. +31-50-363-3721
info@CITER.nl

Projects and main venues of research

- Cost/benefit management of IT.
- Decision-support methods for implementation decisions within organizations.
- Evaluation of legacy systems.
- Innovation and technical change in ICT.
- 'Open' vs. 'proprietary' software modes of development.
- Software patenting and appropriation strategies.
- Tools and strategies for the IT Control Officer.

Sponsors

UWV

Getronics PinkRoccade

Researchers

Prof. dr. E.W. Berghout	e.w.berghout@rug.nl
Drs. Ing. A.L. Commandeur	a.l.commandeur@rug.nl
C.E. Elsenga, MSc	c.e.elsenga@rug.nl
Dr. E. Harison	e.harison@rug.nl
Dr. ir. M.H. Nijland	m.h.nijland@lse.ac.uk
Prof. dr. P. Powell	mnspp@manaement.bath.ac.uk
Dr. T.J.W. Renkema	t.j.w.renkema@rug.nl
Dr. Ir. H. Sassenburg	hanss@sei.cmu.edu
P.M. Schuurman	p.m.schuurman@rug.nl
E.J. Stokking, MSc.	e.j.stokking@rug.nl
S. Orie, MSc.	Sieraadj@asset-control.com

citer

Sprouts

Post-project evaluation of IT business cases: the case of an energy supply company

Peter Schuurman
Egon Berghout
CITER- Centre of IT Economics Research
University of Groningen
P.O. Box 700
9700 AV Groningen
The Netherlands
Corresponding author: p.m.schuurman@rug.nl

Abstract
This research describes the design of a post-project evaluation model for business cases of IT projects. Structured post-project evaluation is hardly common practice in industry (Gwillim *et al*., 1995; Kumar, 1990). Consequently, many improvement opportunities are missed out on, including improving future business cases and system development practices.

On basis of a literature study a post-project evaluation design matrix was developed to illustrate the most important design issues. This matrix includes six post-project evaluation aspects and for all these aspects, the following five issues: evaluation questions, required information, time frame, roles and possible actions.

On the basis of this post-project evaluation design matrix and 30 business case documents a post-project evaluation method was developed for an energy supply company. Various information and communication problems were identified, such as, too little commitment of the business case owner and incomplete initial information. Several quick wins could be established by suggesting improved calculation methods and assigning cost and benefits to responsible owners. Additional benefits could be obtained of post-project evaluation, if the business case should receive significantly more managerial attention and would play a central role in the evaluation of each mile stone. This would considerably improve organizational learning.

Keywords: value creation, decision making**,** investment evaluation, business case, information economics, stakeholder analysis

1 Introduction

In the process of project management many organizations use business cases to justify IT projects. These business cases are used to work out project ideas and typically evolve to a detailed estimation in the initiation phase of the project. During the execution of the project the business case should be updated and evaluated at every milestone until the project is finalized. It is unlikely that all elements of the business case can be realized as envisioned. Both positive and negative deviations will emerge. A post-project evaluation (PPE) is an opportunity to analyze these deviations. The results of this comparison can be used to improve decision making (Von Zedtwitz, 2003). Other benefits include the improvement of systems development practices, improvements in effectiveness and productivity, and making IT tangible for managers and users so that they can recognize, if and how, the existing information systems need to be modified (Kumar, 1990).

However, many companies (Berghout, Nijland, 2002, Gwillim *et al.*, 2005, Kumar, 1990) do not explicitly evaluate the business cases after the realization phase. Due to this absence they could miss out on lessons that may be learned and used for future benefits.

Farbey *et al.* define IT evaluation as, "*a process or group of parallel processes, which take place at different points in time or continuously, for searching and making explicit, quantitatively and qualitatively, all the impacts of an IT project and the programme and strategy of which it is part*" (Farbey, Land and Targett, 1999:190). Elaborating upon this definition, the following sub-evaluations can be discerned:

a. The evaluation of project, as it has been realized e.g. did we develop a valuable information system?

b. The evaluation of the project, as it has been envisioned e.g. what is the quality of upfront evaluation?
c. The evaluation of the envisioned project compared the realization e.g. to what extent did we deviate from our upfront perspective?
d. The evaluation of the envisioned compared to the realization e.g. could we have envisioned the various deviation from our initial perspective?
e. The evaluation of the realized information system compared to the envisioned one e.g. would we follow a similar approach if we would have know the end result in the beginning?

These sub-evaluation are illustrated in Figure 1. *E(t)* represents the envisioned reality *R(t)* at point *t*. *E(t+n)* represents the envisioned reality *R(t+n)* at a later stage in time (*t+n*). The arches *a.* to *e.* refer to the above sub-evaluation. The distinction between *reality* and the *envisioning of this reality* is regarded important, because evaluations are regarded (only) images of *reality*, which will always be incomplete.

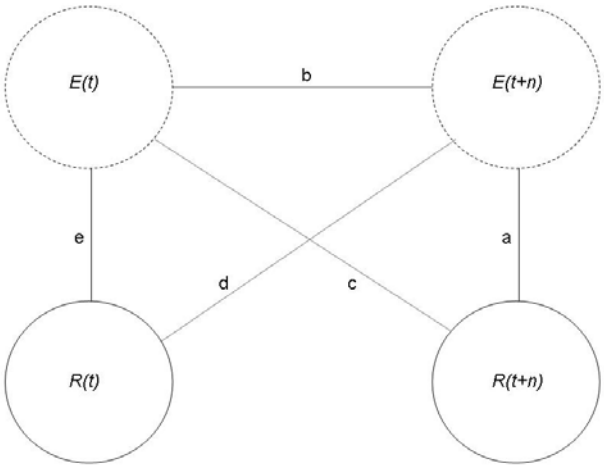

Figure 1: Post-project sub-evaluations

As such, PPE concerns a comprehensive analysis of a project. PPE also includes an evaluation of the applied working methods, similar to double-loop learning (Argyris and Schön, 1978).

The outline of this paper is the following. Firstly, an overview of evaluation of information systems provides two major focus points for the research. Secondly, the theoretical business case elements are identified on the basis of a literature review. Then, these elements are considered regarding PPE. On the basis of this assessment a matrix is determined of which post-project evaluation questions should be asked for each element, which information is required, when the post-project evaluations should take place, who should be involved in the post-project evaluations and what actions should follow the evaluations. Next, thirty business cases and project initiation documents were analyzed on the presence of the theoretical business case elements. With an overview of the information on the elements available the post-project evaluation matrix was tailored to fit the situation at the energy supply company. To provide a practicable solution for the implementation of a post-project evaluation process a template was created on the basis of this matrix. Finally, a pilot evaluation was conducted using the template in order to recover issues to be considered for enabling a good post-project evaluation environment.

2 Evaluation of information systems

Literature on cost/benefit management of information systems has existed since the seventies (see for instance, Frielink, 1975; Joslin, 1977; Borovits and Neumann, 1979). Many studies have been conducted in this area ever since (for instance, Kauffman and Weill, 1989; Willcocks, 1992; McKeen and Smith, 1993; Farbey *et al.,* 1993; Hitt and Brynjolfsson, 1994), and conferences have been devoted to this subject (for instance, The 15th International Conference on Information Systems (ICIS)

research theme, “Improving productivity and adding value through information systems” (DeGross *et al.*, 1994)), and the European Conference on IT Investment Evaluation, since 1994 (Brown, 1994). Besides hundreds of articles, numerous books have been published (for instance, Parker and Benson, 1988; Banker *et al.,* 1993; Remenyi *et al.,* 1993; Hogbin and Thomas, 1994; Hares and Royle, 1994; Willcocks, 1994; Farbey *et al.,* 1993; Gotlieb, 1985). Most research, however, indicates that the many proposed techniques in literature are not being used (or applicable) in practice (Ballantine and Stray, 1998; Hochstrasser, 1994). Many researchers, therefore, emphasize that our understanding of the many issues involved in cost/benefit management should be increased (Powell, 1999; Serafeimidis and Smithson, 2000; Nijland, 2004).

From an economic perspective cost/benefit analysis is essentially an analysis of the expected return of all cash flows generated by the development and operations of an information system (Weston and Copeland, 1986). Given that there is always considerable uncertainty considering future business activities, these cash flows are by definition also uncertain. Understanding both nature and allocation of costs and benefits of development and operations of information systems and managing the learning process of improving this allocation process is, therefore, a major challenge to most organizations. Many researchers report on the changing cost and benefits through the dynamics of projects and the consequenting emphasis on management learning because of the context specificness of costs and benefits (Serafeimidis, 1997; Farbey *et al*., 1999; Smithson and Hirschheim, 1998).

PPE is regarded as an essential part of the life cycle management of information systems (Willcocks, 1996; Farbey, *et al.*, 1999; Thorp 1998; Esther and Brooke, 1995). At this point a substantial amount of the cost have been realized (e.g. development cost) and there is a better understanding of the exploitation cost and overall benefits. The understanding of the benefits has improved, because the information system is now a concrete design and there is certainty about which functionality could be realized and which could not. The understanding of the exploitation cost improved, because there is much more certainty about the technical implications of the actual information system.

This research particularly focuses on the questions whether:

(Q.1) there are appropriate methods available to perform an post-project evaluation, and whether,
(Q.2) there is sufficient data to perform the analysis.

3 Post-project evaluation

Post-project evaluation is regarded as the assessment of the value, worth or usefulness of an IT project after project closure (OGC, 2002, USGAO, 1997, Saarinen and Peffers, 2002, Von Zedtwitz, 2002, 2003, Busby, 1999, Kumar, 1990), its appearance depends on how the previous, actual and future envisioned realities are described. Since only the business consequences of IT projects are observed in this research, the business case has been adopted for this purpose.

Based on three different theories of what a business case is and what it should contain, each providing a different conception contributing to an accurate insight into the business case, the business case is defined as:

“a description of the reasons for the IT project and the justification for undertaking the project.”

This justification is explicitly not only based on the financial consequences of a project, but also includes other elements that have to be accounted for; together these elements are the foundation of the business case. This foundation (Table 1) consists of the estimated costs of the project, the expected business benefits and savings, the considered scenarios, a risks analysis and the project planning and is established in cooperation with the stakeholders of the project (OGC, 2002; Remenyi, 1999; Schmidt, 2002).

	PRINCE2	Remenyi	Schmidt	Similarities
Content	Reasons	Business outcome / Strategic alignment	Intro & overview	Necessity & desired outcome
	Benefits / Cost	Business outcome / IT benefit identification	Business impacts	(Measurable) outcome / Cost-benefit consideration
	Options	-	Assumptions and methods	Considered scenarios
	Stakeholders influence in management process	Stakeholders	Stakeholders influence in management process	Stakeholder identification and roles
	Timescale	Technology issues / Business outcome	-	Planning
	Risks	Project & System risk	Sensitivity, risks & contingencies	Risk Analysis
	Investment appraisal	Summative evaluation (BC process)	Conclusions & recommendations	Investment consideration

Table 1: Similarities between the contents of the business case per theory

Each of the identified elements needs to be evaluated separately (Remenyi, 1999); therefore an overview of the elements and the issues to take into consideration when executing a post-project evaluation was taken from the literature, resulting in a post-project evaluation design matrix (Appendix A). Working towards a method of how business cases should be post-project evaluated, the central points of attention in these overviews are: what and when should be evaluated, and who should evaluate.

In a PPE, the estimations of these elements which where described in the original business case are reflected to the estimations of the actual achievements of the project; this is identical to how a project should be managed by its business case during a project. To facilitate this comparison, it is essential that the initial business case includes a good description of the methods used to make the forecasts; that way, the same circumstances can be used when creation the business case at a later stage (OGC, 2002; Remenyi, 1999; Schmidt, 2002). Furthermore subjecting owners to each piece of content of an element should enable easier reviewing as the quality level of its management is expected to rise.

4 Case study of the Energy Supply Company

The investigated energy supply company concentrates on the production, transport, trading, and delivery of gas and electricity to its domestic and business customers. In addition the company also has activities in the other fields, such as cable company services and waste management. The company has its home market in the northern and southern parts of the Netherlands, but is also active in Belgium and Germany. The enterprise is owned by Dutch provinces and other local authorities. It obtained a turnover of €7.4 billion in 2004, serving 2.6 million consumers and companies and employing 12.000 people. In The Netherlands it is the largest company on the energy market measured by turnover and the number two cable television company in number of customers.

The post-project evaluation method for the energy supply company is based on the analyses of thirty-one project initiation documents (PID) and thirty accompanying business cases the Information Management department in parallel to the six identified business case elements. All projects where ICT oriented and represented a diverse range of aspects such as budgets, time frames, used solutions and size.

The documents were checked for information which can be classed under an element; if information was found, it was examined how it is provided and where it is found, i.e. in the business case or another part. Additionally the company's templates for the PID and the business case were surveyed. These templates indicate the information the organization expects in a business case, whereas the project initiation documents draw up the picture of the information that really is provided.

It was seen that the business case was used to justify project and account for the costs and benefits of projects.

Costs noted are only expenditures, just one business case explicitly listed disadvantages, which could be caused by the project. The information supplied on the costs was seen in three dimensions; these are the different activities, owners and efforts of a project. A large part of the costs indicated are the use of human resources, providing information in hours and tariffs. The exploitation costs are for the most part only noted as a total based on a rule of thumb (17% of the total project costs during the project). Where a breakdown was available, the components of maintenance, control and support were identified.

The *benefits* consider both financial yields and savings as non-financial improvements. A categorization was found to be used in the classes of risk reduction or avoidance, cost reduction and efficiencies, business opportunities and intangibles. The information supplied on the benefits in these classes was either only a qualitative notion of the benefits origin, the origin accompanied by an amount and the origin along with a calculation leading to a total. The included calculations comprised mainly cost reductions and efficiencies in processes.

Subsequently, justification in the business case is filled in by an economic statement of the benefits in comparison to the costs. This statement is made via a cash flow overview, ROI, IRR, NPV, and/or payback period.

Although the business case itself serves only the costs and benefits elements of the theoretical business case, the other elements are at hand. The project initiation documents have embedded the elements of risk analysis, project planning and stakeholders.

The information on the element of *risk* is provided by project control, covered by the management of exception, and the risk log. At best the risk log is completed using a risk analysis, supplying information about the probability, impact, priority and actions for each identified risk.

For the business case, the element of *project planning* provides information supporting the information on the costs of the project and the deliverables. This information consists of which deliverables should be available when, at what costs (in hours and non-hours) and developed by whom.

Stakeholder information is made available through the project organization and communication. These sections indicate which persons or groups have an interest in the project. For the persons and groups involved in the project organization their roles are determined. Subsequently in the communication matrix, a one-way information stream from the project organization to all stakeholders is arranged.

Until now, one theoretical element was not handled in this paragraph, namely the *considered scenarios*. This element was found neither in the business case, nor in the PIDs on a standard basis. An explanation for the absence could be the consideration of scenarios in the project brief. Upon this document a solution is chosen, which is than elaborated in the PID. Whether or not this explanation is viable lies beyond the scope of this research.

Based on the overview of available information in the business cases of the organization, the post-project evaluation design matrix was tailored to fit the situation at the power supply company. In the survey of the business case elements, the post-project evaluation questions, time frames or actions as determined in the design matrix seem to fit. Therefore, the information on these items remains intact, but should be reassessed whenever the business case is subject to change.

The design matrix can however be adjusted with information on possible sources for the organization to gain information on the initial business case. This resembles where the information was identified in the business cases and PIDs. Furthermore, it can be determined in what way the post-project information is required to keep it in line with the initial business cases. This description equals what information was found on the elements. On the basis of these findings, the design matrix was tailored to the power supply company. Subsequently, a template was developed on the basis of the information and the adjusted matrix. This template is made to create a bridge between the theoretical approach of PPE at the energy supply company and its practicability.

In order to test this practicability and to recover issues to be considered for enabling a good post-project evaluation environment, the template was applied to evaluate a pilot project. The implementation was executed under supervision of the manager Architecture, Quality Management and Advanced Development. Three major issues were identified, which are described next.

The main problem in the execution of the post-project evaluation was the lack of clearly stated initial information. To facilitate the comparison of the cases, it is essential that the initial case includes good descriptions of the methods used to make the forecasts; that way, the same circumstances can be used when creation the PPE business case. This problem arises for instance in the described reduction of the maintenance costs. In the pilot evaluation only four FTEs noted to be used at IM are included in these costs. If, however, there were any other costs included in the original estimation of the maintenance costs, the result on this benefit will improve.

This example shows exactly how an evaluation loses its value quickly if the initial information is not sufficient. In all cases the origin of the calculations and estimates should be described and the question should be asked if and how PPE could be executed. Well defined initial descriptions also make PPE an easier job, since it is known to a certain level what information is needed.

The second aspect which came forward in the pilot evaluation is the general difficulty of executing profound benefit and cost tracking, stakeholder and risk management and planning analysis. The management and evaluation of each of these elements is a profession on its own and there is a lot more to it than what is described in this research and done in the pilot. Particularly the descriptions of the elements of benefits, stakeholders and risks seem to be too narrow for valuable post-project evaluation. Further research on each of these elements found increases the clarity and practicability of their post-project evaluation.

Thirdly, it once more became clear that the business case is not a one time document, but a technique to continually assess the justification of a project. All elements have to be updated throughout and after the project for management with the business case and to enable valuable post-project evaluation. This is why, for instance, an evaluation of the differences between the IRR at project closure and the IRR after a period of exploitation provides more relevant information on the actual performance of the project outcome than a comparison of the actual IRR and the meanwhile outdated IRR at project initiation.

For the power supply company these three issues imply that in order to create the learning loop from the business case to its post-project evaluation to improving the business case there is a need to improve the quality and completeness of the provided information at initiation, including measurables and owners for the elements. This will clarify what needs to be evaluated post-project. Furthermore, the process of post-project evaluation needs to be embedded in the organization enforcing the management of projects with the business case. The template could serve as a starting block in the process of implementing post-project evaluation.

5 Conclusions

The purpose of this research was to develop a practicable PPE method for business cases of IT projects of an energy supply company. Just like many other organizations, the energy supply company did not perform post-project evaluations. Based on a literature review six elements of the business case where identified, each of which should be assessed in a PPE. Using a review of 30 project initiation document and business cases without any hold back data, the theoretical approach was altered to fit the situational circumstances by adjusting the possible sources and required information. A template was used to create an applicable shell.

The observed cases indicated a use of the business case solely for cost/benefit purposes. The information which was present did not meet the conditions for a useful evaluation and would probably be unable to support a learning loop. Therefore there is a need to improve the provided information for the organization. The pilot implementation of the template emphasizes this need.

Answering our initial research questions whether there are sufficient data and methods available is, therefore, not straightforward; information on the business case elements is available in project documentation, however, the level of detail of this information is often not adequate for an evaluation.

If more detailed information would be available, the methods available from the fields of cost, benefit, risk and stakeholder management, and planning analysis can be considered for post-project evaluation of business case elements.

To obtain the required level of information, business cases should also be drawn up with the evaluation in mind. A standard way of working is required to identify which information should be delivered at which stage of the project and who are the responsible owners of this information. This embedding could be the hardest obstacle to come by, since project owners are likely to be reluctant to be settled on their project performances.

References

Ballantine J. and Stray, S. (1998) 'Financial appraisal and the IS/IT investment decision making process', *Journal of Information Technology*, volume 13, pp. 3-14.

Banker, R.D., Kauffmann, R.J. and Mahmood, M.A. (1993), *Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage*, Harrisburg, PA: Idea Group Publishing, ISBN 1-878289-16-0.

Berghout, E. and Nijland, M. (2002), 'Full life cycle management and the IT management paradox', in Remenyi, D. and Brown, A. (eds.) (2002), *Make or break issues in IT management*, ComputerWeekly Professional Series, Oxford: Butterworth Heinemann, ISBN 0-7506-5034-6.

Borovits, I. and Neumann, S. (1979) *Computer Systems Performance Evaluation*, Lexington, MA: D.C. Heath and Co.

Brown, A. and Remenyi, D. (1994) *Proceedings of the First European Conference on Information Technology Evaluation*, Birmingham: Operational Research Society.

Busby, J.S. (1999) 'An Assessment of Post-Project Reviews', *Project Management Journal*, September, volume 30, no. 3, pp. 23-29

DeGross, J.I., Huff, S.L. and Munro, M.C. (eds.) (1994) *Proceedings of the Fifteenth International Conference on Information Systems*, Vancouver, B.C., December 14-17, distributed by ACM.

Esther J. and Brooke, C. (1995) 'A business-wide value model for evaluating information technology investments', in Brown, A., Remenyi, D. (eds.) (1995) *Proceedings of the 2nd European Conference on Information Technology Investment Evaluation*, July 11-12, Henley, pp. 277-297.

Farbey B., Land, F. and Targett, D. (1993), *How to Evaluate Your IT investment: A Study of Methods and Practice,* Oxford: Butterworth Heinemann.

Farbey, B., Land, F., Targett, D. (1999) 'Moving IS evaluation forward: learning themes and research issues', *Journal of Strategic Information Systems*, volume 8, issue 2, pp. 189-207.

Frielink, A. B. (ed.) (1975) *Economics of informatics*, Amsterdam, North-Holland: Elsevier.

Gotlieb, C.C. (1985) *The economics of computers: costs, benefits, policies, and strategies*, Upper Saddle River, NJ: Prentice-Hall, Inc.

Gwillim, D., Dovery, K. and Wieder, B. (2005) 'The politics of post-implementation reviews', *Information Systems Journal*, Volume 15, pp. 307-319.

Hares J. and Royle, D. (1994) *Measuring the Value of Information Technology*, Chichester: Wiley.

Hitt L. and Brynjolfsson E. (1994) 'The Three Faces of IT Value: Theory and Evidence', *Proceedings of the 15th Annual International Conference on Information Systems*, Vancouver, B.C., December 14-17, pp. 263-277.

Hochstrasser, B. (1994) 'Justifying IT investments', in L. Willcocks (ed.), *Information management: the evaluation of information systems investments*, Chapter 8, pp. 151-169, London: Chapman & Hall.

Hogbin G. and Thomas, D.V. (1994) *Investing in Information Technology: Managing the Decision Making Process*, London: McGraw-Hill.

Joslin, E.O. (1977) *Computer Selection*, Augmented Edition, The Technology Press

Kauffman R.J. and Weill, P.W. (1989) 'An Evaluation Framework for Research on the Effects of Information Technology Investment', *Proceedings of the 10th International Conference on Information Systems*, Boston, MA, December 4-6, pp. 377-388.

Kumar, K. (1990) 'Post Implementation Evaluation of Computer-Based Information Systems: Current Practices', *Communications of the Association for Computing Machinery*, February, vol. 33, issue 2, pp. 203-212.

Nijland, M. (2004) *Understanding the Use of IT Evaluation Methods in Organizations*, GigaBoek, September, ISBN 90-8548-014-0, available: http://www.itevaluation.nl

Office of Government Commerce (OGC) (2002), *Managing Successful Projects with PRINCE2,* ISBN 0-11-330891-4

Parker M.J. and Benson, R.J. (1988) *Information Economics: Linking Business Performance to Information Technology*, Englewood Cliffs, NJ: Prentice-Hall.
Powell, P.L. (1999) 'Evaluation of Information Technology Investments: Business as Usual?', in Willcocks, L. and Lester, S. (eds.), *Beyond the IT Productivity Paradox*, Chichester: Wiley.
Remenyi, D. (1999), *IT investment, making a business case*, Oxford: Butterworth Heinemann, ISBN 0-7506-4504-0.
Remenyi, D., Money, A. and Twite, A. (1993) *A Guide to Measuring and Managing IT Benefits*, Manchester: NCC Blackwell.
Saarinen, T. and Peffers, K. (2002) 'Measuring the Business Value of IT Investments: Inferences From a Study of a Senior Bank Executive', *Journal of Organizational Computing and Electronic Commerce*, volume 12, issue 1, pp. 17-38.
Schmidt, M. (2002) *The Business Case Guide, 2nd edition*, Solution Matrix Ltd., ISBN 1-929500-01-7.
Serafeimidis, V. (1997) *Information Systems Investment Evaluation: Conceptual and Operational Explorations,* PhD Thesis, London School of Economics and Political Science, London
Serafeimidis, V. and Smithson, S. (2000) 'Interpretive is evaluation in practice: experience from a case study', *Journal of Information Technology*, volume 15, issue 2, pp. 93-105.
Smithson S. and Hirschheim, R.A. (1998) 'Analyzing information systems evaluation: another look at an old problem', *European Journal of Information Systems*, volume 7, issue 3, pp. 158-174.
Thorp, J.A. (1998) *The Information Paradox: Realizing the Benefits of Information Technology*, Toronto: McGraw-Hill.
United States General Accounting Office (USGAO) (1997) *Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making*, GAO/AIMD-10.1.13, Version 1, February, available: http://www.gao.com
Weston J.F. and Copeland, T.E. (1986), *Managerial Finance*, New York, NY: CBS
Willcocks, L. (1992) 'Evaluating information technology investments: research findings and reappraisal', *Journal of Information Systems*, volume 2, issue 4, pp. 243-268.
Willcocks, L. (1996) *Investing in Information Systems: Evaluation and Management*, London: Chapman and Hall.
Willcocks, L. (ed.) (1994) *Information Management: Evaluation of Information Systems Investments*, London: Chapman & Hall.
Zedtwitz, M. von (2002) 'Organizational learning through post-project reviews in R&D', *R&D Management*, volume 32, issue 3, Oxford: Blackwell Publishers Ltd.
Zedtwitz, M. von (2003), 'Post-Project Reviews in R&D', *Research Technology Management*, September-October, pp. 43-49.

Appendix A: Implementation of post-project evaluation

Element	Part	PPE questions	Required information for PPE	Time frame	Roles	Actions
Costs	Monitor	What are the amount differences at the debit items? Are there any unforeseen cost types? If so, how much did this amount to?	Actual costs during the observed stage in the categories of technology, human and organization issues.	Standard: First time at project closure. After that, simultaneous with benefit reviews. Non-standard: When the business case is reassessed of necessity due to arising exceptions.	Project costs: Responsibility with the project manager; support by finance department. Realized exploitation costs: Responsibility with the line manager; support by users.	Use obtained review information and its consequences to update the business case. With part attention to the (affects of the) exploitation costs irregularity. In case of (unauthorised) exceptions: reassess justification for the future exploitation of the p by reviewing the entire business case under influence of exception.
	Forecast	What are the expected exploitation costs? Are there any new costs anticipated? Are adjustments to the exploitation necessary?	Expected exploitation costs at the categories of technology, human and organization issues.		Responsibility with the line manager; support by users.	Execute planned approach with any possible adjustments to the exploitation process, update business case and reassess justification of exploitation.
Benefits	Monitor	Were or are the predicted benefits achieved? Are there any unforeseen benefits?	Achieved tangible and intangible benefits at the level of IT, business and environment.	Standard: According to benefit planning. *If a benefit plan is not available, estimate a reasonable time in regard to the product's economic life.* Non-standard: When the business case is reassessed of necessity due to arising exceptions.	Line management; support by users.	Use obtained review information and its consequences to update the business case. With part attention to the (affects of the) exploitation benefits irregularity. In case of (unauthorised) exceptions: reassess justification for the future exploitation of the p by reviewing the entire business case under influence of exception.
	Forecast	What benefits are expected to be achieved? Are there any new benefits anticipated? Are adjustments to the exploitation necessary?	Expected tangible and intangible benefits at the level of IT, business and environment; supported by clear defined measurables and a benefit plan.			Execute planned approach with any possible adjustments to the exploitation process, update business case and reassess justification of exploitation.
Considered Scenarios	Monitor	Was the right choice made between the scenarios? Did the predicted, worst or best case scenario arise?	Information on the other elements of the business case for the chosen scenario. Other scenarios updated with experiences from the project.	One time review at project closure.	Responsibility with the project manager; support by business.	In case of wrong choice between scenarios: reassess justification for the future exploitation o product by reviewing the entire business case in comparison to the initially rejected scenario.
Risks	Monitor	How did risks influence the business case outcome during the observed stage?	Occurred risks during observed stage and influences on business case elements.	Standard: First time at project closure. After that, simultaneous with benefit reviews. Non-standard: When the business case is reassessed of necessity due to arising exceptions.	Project risks: Responsibility with the project manager; supported by the owner of the process where a risk occurred. Realized exploitation risks: Responsibility with the line manager; support by risk management.	Use obtained review information and its consequences to update the busi part attention to the (affects of the) occurred risks. In case of occurring risks: reassess justification of exploitation by reviewi using case.
	Forecast	Which risks endanger the business case outcome while exploiting the project in the future? Does the project endanger any other processes? Are adjustments to the exploitation necessary?	Project specific risks when exploiting the project and environment risks to which can be attributed to the project.		Responsibility with the line manager; support by risk management.	Reassess risk analysis, indicate probability, impact, risk owner and (coun e tal update the business case and reassess justification of exploitation.
Project planning	Monitor	Was the project carried out as scheduled?	Actual time frame of the project.	One time review at project closure.	Responsibility with the project manager; support by project team.	In case of (unauthorised) exceptions: reassess justification for the future e he p by reviewing the entire business case under influence of exception.
		Were the deliverables in conformity with the specifications?	Description of the delivered project deliverables.	One time review at project closure.	Responsibility with the project manager; support by designers, users and project team consulted.	
Stakeholder	Monitor	Who played what role with which influences during the observed stage? Were there any unforeseen stakeholders?	Overview of all persons with their roles and their influences who affected or were affected by the product.	Standard: First time at project closure. After that, simultaneous with benefit reviews. Non-standard: When the business case is reassessed of necessity due to arising exceptions.	Project stakeholders: Responsibility with the project manager; support by the project champion. Realized exploitation stakeholders: Responsibility with the line manager.	Use obtained review information and its consequences to update the business case. With part attention to the (affects of the) changed stakeholder activities.
	Forecast	Who plays what role in obtaining the business case during future exploitation? Are adjustments to the exploitation necessary?	Overview of all persons with their roles who affect or are affected by the exploitation of the product and their expected influences.		Responsibility with the line manager.	Determine stakeholder influences, adjust stakeholder management where necessary, update t business case and reassess justification of exploitation.

芽|Sprouts

Working Papers on Information Systems | ISSN 1535-6078

Office:
Sprouts
University of Amsterdam
Roetersstraat 11, Room E 2.74
1018 WB Amsterdam, Netherlands
Email: admin@sprouts.aisnet.org

芽|Sprouts